CLAIMS

What is claimed is:

1. A polymer prepared by polymerizing a polymerizable component from a mixture containing said polymerizable component and a surfactant, said surfactant and said polymerizable component being present in said mixture in a molar ratio of at least 0.2 : 1, said material having an average pore size greater than 4 nm and a density greater than 0.1 g/cc.

2. The polymer according to claim 1 wherein said polymerizable component comprises a resorcinol/formaldehyde system and said mixture comprises an aqueous solution.

3. The polymer according to claim 1 wherein said polymerizable component comprises a divinylbenzene/styrene system and said mixture comprises an organic solution.

4. The polymer according to claim 1 wherein said polymerizable component comprises vinylidene chloride.

5. The polymer according to claim 1 wherein said polymerizable component comprises a vinylidene chloride/divinylbenzene system and said mixture comprises an organic solution.

6. The polymer according to claim 1 wherein said mixture further includes a catalyst.

7. The polymer according to claim 1 wherein the surfactant is a cationic surfactant.

8. The polymer according to claim 1 wherein the surfactant is an anionic surfactant.

9. The polymer according to claim 1 wherein the surfactant is a nonionic surfactant.

10. The polymer according to claim 1 wherein the polymer is monolithic.

11. The polymer of claim 1, further comprising at least one additive incorporated therein, said additive being selected from the groups consisting of high surface area powders, metal salts, organometallics, and fibers.

12. The polymer of claim 1 having a BET surface area of at least about 50 m^2/g..

13. The polymer of claim 1, further including a quantity of at least one metal powder.

14. The carbon prepared by carbonization of the polymer according to claim 1, having a pore size greater than 2 nm, a density greater than 0.1 g/cc, and electrical conductivity greater than 10 Scm^{-1}.

15. A carbon having a volumetric capacitance in a non-aqueous electrolyte of at least 20 F/cc, a density greater than 0.5 g/cc, and an average pore size greater than 10 nm.

16. The carbon according to claim 15 wherein the carbon has a conductivity of at least 10 Scm^{-1}.

17. The carbon according to claim 15 having a surface area of 50 to 2000 m^2/g.

18. The carbon according to claim 15 wherein the carbon is monolithic.

19. The carbon of claim 15, further comprising at least one additive incorporated therein, said additive being selected from the groups consisting of high surface area powders, metal salts, organometallics, and fibers.

20. A capacitor, comprising:

at least two electrodes, at least one of said electrodes comprising a mesoporous carbon material having a volumetric capacitance in a non-aqueous electrolyte of at least 20 F/cc, a density greater than 0.5 g/cc, an average pore size greater than 10 nm, and a conductivity of at least 10 Scm^{-1}; and

an electrolyte in contact with the electrodes.

21. The capacitor according to claim 20 wherein the electrolyte is a non-aqueous electrolyte.

22. The capacitor of claim 20 wherein said carbon material is prepared by carbonization of a polymer having a BET surface area of at least about 50 m^2/g..

23. The capacitor according to claim 20 wherein the carbon material is monolithic.

24. A porous carbon monolith with at least one dimension greater than 2 mm, a surface area between 200 and 2000 m^2/g, a density greater than 0.5 g/cc, a pore size greater than 10 nm.

25. The porous carbon monolith according to claim 24 having a conductivity of at least 10 Scm^{-1}.

27. A substrate for liquid chromatography, comprising

a polymer prepared by polymerizing a polymerizable component from a mixture containing said polymerizable component and a surfactant, said surfactant and said polymerizable component being present in said mixture in a molar ratio of at least 0.2 : 1, said material having an average pore size greater than 4 nm and a density greater than 0.1 g/cc.